



CAIT

Center for Advanced Infrastructure & Transportation
Rutgers, The State University of New Jersey

QUARTERLY PROGRESS REPORT

Project Title:	Monitoring of Construction Doremus Avenue Bridge Structure		
RFP NUMBER: N/A	NJDOT RESEARCH PROJECT MANAGER: Nick Vitillo		
TASK ORDER NUMBER/Study Number: 99 / 4-26676	PRINCIPAL INVESTIGATOR: Hani Nassif		
Study Start Date: 01/01/2001 Study End Date: 12/31/2004	Period Covered: 3 rd Quarter 2003		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Literature Search and Field Coordination	5%	0%	100%	5%
Finite Element Model Development and verification (Substructure & Superstructure)	10%	20%	90%	9%
Develop Instrumentation Plan and Install Sensors	20%	5%	100%	20%
Parametric Study	20%	10%	90%	18%
Perform Monitoring and Data Collection	25%	10%	90%	22.5%
Prepare Recommendations to Modify AASHTO and NJDOT's Procedures	5%	10%	10%	0.5%
Comparison of Analytical and Experimental Results	5%	10%	70%	3.5%
Progress Reports	5%	5%	95%	4.75%
Final Report	5%	10%	10%	0.5%
TOTAL	100%			83.75%

1. Progress this quarter by task

A. Latex Modified Concrete Layer:

1. Testing and installation of sensors in the Latex Modified Concrete (LMC) layer to measure temperature and static and dynamic strain is being performed. Work on Stage II LMC corrective work has been concluded on Friday 8/29/03.
2. Various LMC specimen have been sampled to test for strength, restrained shrinkage, unrestrained shrinkage, rapid chloride permeability, freeze and thaw, etc. Results are reported at various ages. Specimens are field cured under the same conditions as those of the bridge deck.
3. Truck calibration tests as well as live loading tests of bridge deck performance are planned for Sept. 18-19, 2003.
4. It is expected that Stage I LMC work will begin after traffic is open on Stage II after Sept. 19th, 2003.

B. WIM System

1. The pending plate WIM system is not yet operational which will cause delays in traffic opening of stage II. The Electric Subcontractor has not done much since our last meeting on July 18th, 2003.
2. The Rutgers equipment and sensors in Stage II are triggered by the WIM pending plate system and it needs to be completely functional and calibrated prior to traffic opening of stage II.

C. Fatigue System

1. Fatigue data is being processed. Few of the sensors have high noise to signal ratio. The Rutgers team is studying various methods of reducing noise in the data.

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2. The fatigue system will need to be collected to the WIM system to distinguish load cycles and truck weight spectra.

2. Proposed activities for next quarter by task

1. Testing Stage II after LMC layer is poured.
2. Calibration and testing of WIM system and connection to equipment and sensors.
3. Stage I LMC sensor installation and monitoring.
4. Stage I LMC specimen sampling and testing.
5. Stage II static and dynamic testing.
6. Installation of UIC Fiber Optic Sensors and other Rutgers' sensor in approach slabs located at Stage I South Abutment.
7. Testing and monitoring of Approach Slabs in South Abutment.

3. List of deliverables provided in this quarter by task (product date)

4. Progress on Implementation and Training Activities

5. Problems/Proposed Solutions

6. Budget Summary*

Total Project Budget (# of years)	4 Years	\$581,825
Total Project Expenditure to date		\$443,726
% of Total Project Budget Expended		76%
Task Order Number/Study Number:		99 / 4-26676
Current Task Order Budget (# of years)	Year 1, 2, 3, and 4	\$581,825
Actual Expenditure to date against current task order		\$443,726
% of current task order budget expended		76%

* These are approximate expended amounts for the project; these estimates are for reference only and should not be used for official accounting purposes. For a more accurate project accounting please review the quarterly invoice for this project.

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